

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/008836 A3

(51) International Patent Classification⁷: **A23P 1/12**,
A23J 3/26

SD, SE, SG, SK, SI, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2003/022949

(84) Designated States (*regional*): ARIPO patent (GI, GM,
KE, LS, MW, MZ, SD, SI, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 22 July 2003 (22.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/397,986 23 July 2002 (23.07.2002) US

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES,
FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO
patent (GH, GM, KE, LS, MW, MZ, SD, SI, SZ, TZ, UG,
ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU,
TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT,
RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only

(71) Applicant (*for all designated States except US*):
CARGILL, INCORPORATED [US/US]; 15407
McGinty Road West, Wayzata, MN 55391 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **FOX, Eugene, J.**
[US/US]; 6707 Morrow Drive, Dayton, OH 45415 (US).
MEHRA, Suhas, K. [IN/US]; 9917 Herlihy Court, Mi-
amisburg, OH 45342 (US). **EYAL, Aharon, M.** [IL/IL]; 16
Levy, Jerusalem (IL). **WALSH, James, T., II** [US/US]; 301
Monteray Avenue, Dayton, OH 45419 (US). **PETERS, Eu-
gene, M., Jr.** [US/US]; 1589 Constance Avenue, Kettering,
OH 45409 (US). **SHANDERA, Donald, Lee, Jr.** [US/US];
640 County Road A, Ashland, NE 68003 (US). **FISHER,
Rod, R.** [US/US]; 16820 South Shore Lane, Eden Prairie,
MN 55346 (US).

(74) Agent: **DEGRANDIS, Paula, A.**; Cargill, Incorporated,
15407 McGinty Road West, Wayzata, MN 55391 (US).

Published:

- with international search report

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,

(88) Date of publication of the international search report:
10 June 2004

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: PROCESS FOR PRODUCING FERMENTATION FEEDSTOCK FROM EXTRUDED CEREAL MATERIAL

(57) Abstract: There is disclosed a process for producing a fermentation feedstock from a cereal material that is extruded. The cereal material extrudate is liquefied and separated into streams. Furthermore, of the liquefied extrudate may be saccharified.

WO 2004/008836 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22949

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A23P 1/12; A23J 3/26
US CL : 426/63, 64, 516, 276, 442

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 426/63, 64, 516, 276, 442, 448

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,467,525 A (HALE et al.) 16 September 1969 (16.09.1969), see entire document	1-30
A	US 4,260,473 A (BAUER) 07 April 1981 (07.04.1981), see entire document	1-30
A, E	US 6,635,297 A (MOSS et al.) 21 October 2003 (21.10.2003), see entire document.	1-30
A	US 6,106,673 A (WALKER) 22 August 2000 (22.08.2000), see entire document	1-30
A	US 5,958,233 A (WILLGOHS) 28 September 1999 (28.09.1999), see entire document	1-30
A	US 6,132,625 A (MOFFET) 17 October 2000 (17.10.2000), see entire document.	1-30

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

12 January 2004 (12.01.2004)

Date of mailing of the international search report

12 FEB 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Keith Hendricks

Telephone No. (571) 272-0987

INTERNATIONAL SEARCH REPORT

PCT/US03/22949

Continuation of B. FIELDS SEARCHED Item 3:

WEST

search terms: extrusion, extrud\$, cereal, grain, corn, wheat, hydroly\$, liquef\$, stream